

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM**Date Form Completed:** 2/19/15**General Site Information**

Region: 9 City: Oakland State: CA

CERCLIS EPA ID: CA0001576081

CERCLIS Site
Name: AMCO
Chemical
Corporation

NPL Status: (P/F/D) F

Year Listed to NPL: 2003

Brief Site Description: *(Site Type, Current and Future Land Use, General Site Contaminant and Media Info, Site Area and Location information.)*

EPA has been working in the AMCO Chemical Superfund Site community for the past twenty years, adding the site to the National Priorities List twelve years ago. The Site is located at 1414 3rd Street at the southeastern corner of the South Prescott neighborhood of West Oakland, one block south of the West Oakland Bay Area Rapid Transit (BART) station. Due to the neighborhood's mixed-land use, residents live directly adjacent to commercial and industrial properties. BART and the Port of Oakland add traffic congestion to the overburdened community, while the Cypress (I-880) Freeway lends noise and impacted air quality. The South Prescott community self-identifies as an "Environmental Justice" community, supported by EJ Screen data that place the area in the 96th percentile nationally for Diesel PM and 90th percentile for Air Toxics Cancer Risk. EPA's Site data identifies benzene risk in ambient (background) air to be in the 10E-3 range.

The Facility is bordered on the north by a vacant lot owned by BART, on the west by residences, on the south by 3rd Street, and on the east by the Nelson Mandela Parkway (formally Cypress Street). The size of the facility is approximately 160-200 feet (about 0.9 acre). The nearest residences are immediately adjacent to the Facility along 3rd and Center Streets. The facility is currently leased to an entrepreneur who is subleasing portions of the property for commercial purposes, with a vision of serving community artists by providing studio space. A reuse study completed by EPA contractors several years ago concluded that the most likely future use scenario for the neighborhood was continued commercial/residential use, but with a shift from single family residences to multi-family housing built over commercial space. The neighborhood's proximity to BART makes it attractive as a commercial/residential/transportation hub. However, many residents of South Prescott want to preserve its identity as a neighborhood of single family homes, and are working with the City to influence zoning to achieve this goal.

The AMCO property was used as a chemical repackaging and distribution facility from the 1960s until 1989. Bulk chemicals (particularly solvents) were off-loaded from a railroad spur on-Site or from tanker trucks and stored in drums and storage tanks before being transferred to smaller containers for resale. Various sampling efforts have documented elevated concentrations of multiple contaminants of concern ("COCs"), including heavy metals, volatile and semi-volatile organic compounds, petroleum hydrocarbons, organochlorine pesticides, dioxins/furans, and PCBs. All of these COCs, except lead and arsenic, have been tied to former AMCO operations, and have contaminated soil, groundwater and air.

Vapor intrusion by VOC's is the primary risk driver for the proposed Non-Time Critical Removal Action. TCE vapors are intruding into the indoor air of the warehouse and office on the AMCO property, completing the exposure pathway from underlying contaminated soil and groundwater to occupants of these buildings. The

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depth to groundwater at the site is approximately five feet. TCE and its degradation products were also detected in the crawlspaces of residences during the PA/SI and RI. In Fall 2009, mitigation systems were installed in four homes as a removal action, due to potential for vapor intrusion into indoor air. Although the results of indoor sampling did not show a completed pathway to indoor air, the decision was made to take a precautionary approach due to the nature of the COCs (TCE and degradation byproducts, including vinyl chloride), the limitations of the dataset, and the potential for cumulative impacts in this overburdened community.

In 2009, the South Prescott community created a Community Action Group (CAG) to officially participate in the Superfund process. The CAG, consisting of a diverse representation of community members, held frequent meetings for three years. These tapered off from 2013 to 2014, when EPA was performing field investigations to fill data gaps identified during the RI/FS and Proposed Plan processes. The CAG meetings are ramping up again in response to the preparation of this EE/CA. The CAG requests EPA's presence and involvement during their meetings to ensure their voices are heard by the agency. Members of the South Prescott community pride themselves on being active and vocal proponents of environmental justice, and several grassroots organizations have interest in the AMCO site. Most notably, the director of the West Oakland Environmental Indicators Project also serves as the CAG's co-chair.

General Project Information

Type of Action:	Non-Time-Critical Removal Action	Site Charging SSID:	09DJ
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Operable Unit:	00	CERCLIS Action RAT Code: RV00
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Is this the final action for the site that will result in a site construction completion? ☒ Yes ☐ No

It is possible that no further construction will be required following the proposed Action. Exem

Will implementation of this action result in the Environmental Indicator for Human Exposure being brought under control? ☒ Yes ☐ No

The AMCO Site is already HEUC in short-term. The proposed NTCRA will reduce the time frame for Long-term Human Health Protection for down-gradient private residences with VI mitigation systems and will eliminate the VI pathway for on-property buildings.

Response Action Summary

Describe briefly site activities conducted in the past or currently underway:

Local, State, and federal involvement at the Site began in 1983 when AMCO initiated contact with EPA to assert that it was not a Treatment, Storage, or Disposal Facility. In 1985, the Alameda Fire Marshall requested assistance from the predecessor to the Department of Toxic Substances Control ("DTSC"), indicating that "serious conditions" existed at the Site for a significant period of time and were growing worse. Alameda County Health Care Services Agency performed a Hazardous Waste Generator inspection in 1986, noting two underground storage tanks that lacked leak detection systems.

Beginning in 1988, State and local activities at the Site increased. That year, acting on a complaint from an employee of a drum disposal company, DTSC conducted several inspections of and interviews at the AMCO facility that revealed various solvents and other chemical mixtures were improperly stored on the property. It is suspected that groundwater and soil contamination occurred as a result of improper storage and handling of chemicals. In 1989, the Cypress Partnership purchased the property and became involved in discussions with State and local authorities. In 1995, the degree of the contamination was revealed when workers excavating trenches for the California Department of Transportation were overwhelmed, with one worker falling unconscious from inhalation of vinyl chloride.

Following the vinyl chloride discovery, EPA conducted an emergency removal in 1996 and 1997, which resulted in the construction and operation of a dual phase groundwater and vapor extraction system with a thermal oxidation treatment unit. The system operated for over a year to address VOCs in the source area, then was shut down in 1998 due to community concerns about emissions from the exhaust stack. The Site was proposed for listing on the National Priority List ("NPL") on April 30th, 2003. The Site was officially added to the NPL on September 29, 2003.

A Remedial Investigation ("RI") was conducted during 2002- 2008. Key findings of the RI are:

- The depth to groundwater at the site is approximately five feet.
- Several feet of LNAPL were observed floating on groundwater beneath the central area of the former AMCO facility. The LNAPL consists primarily of VOCs, including tetrachloroethene ("PCE") and trichloroethene ("TCE"), but also contains SVOCs, pesticides, and dioxins/furans. The LNAPL is serving as the primary continuing source of contamination to groundwater, soil, and soil gas.
- The highest concentrations of contaminants (primarily VOCs) in groundwater and soil gas were generally observed in the central and south-central areas of the former AMCO facility, corresponding with the known locations of former chemical storage units and buried distribution piping.
- Groundwater contaminant concentrations beneath the central and south-central portions of the former facility decrease rapidly with depth. The concentrations in the deepest monitoring wells at the site are low or below detection levels, indicating that dense non-aqueous-phase liquid ("DNAPL") has not migrated below approximately 20 to 30 feet bgs at the site.
- The VOCs identified as key contaminants (chlorinated solvents and petroleum hydrocarbons) are undergoing significant biodegradation in groundwater.
- 1,4-Dioxane, a highly mobile and recalcitrant contaminant, has widely migrated in groundwater from the site, and is expected to continue migrating. Other contaminants mobilized in groundwater are soluble arsenic, iron, and manganese. Other metals, organochlorine pesticides, PCBs, and dioxins/furans generally have limited mobility in the environment, and the extents of these compounds are limited to the immediate vicinities of their historic suspected source areas.
- Several contaminants in groundwater currently exceed risk criteria for the ingestion pathway; however,

groundwater is not currently used nor is it likely to be used in the future as a source of drinking water.

- The distributions of contaminants in soil are less centralized and more widespread than in groundwater, suggesting multiple industrial, non-industrial, and non-point sources. Many contaminants in soil, particularly lead, exceed risk criteria for industrial and residential receptors.
- Several VOCs were detected above screening levels, but within the acceptable risk range in residential soil gas, crawlspace air, and ambient air. No VOC detections exceeded acute reference concentrations, indicating no immediate health threat to residents. The primary source of the VOCs in residential soil gas and air is groundwater, not soil.

In 2010, EPA developed a Proposed Plan for an Interim ROD to excavate the source area. However, the costs of the excavation alternative were excessive (\$40-60 million) and the uncertainties regarding the extent of contamination in the source area were such that the National Remedy Review Board recommended further soil characterization in the source area to better assess cleanup options, focusing on in situ remedies.

Between 2009-2014, a variety of investigations addressed data gaps (as follows) and culminated in the RI Report Addendum (Sept 2014):

- Gas-phase monitoring activities were expanded to include indoor air sampling of residences near the AMCO Site, while continuing soil gas, crawlspace air, outdoor air and background (ambient) air sampling. Sampling results were compared with screening levels established for chemicals of concern ("COCs").
- Over 1500 soil samples were collected and analyzed, with the majority collected from the source area.
- Groundwater monitoring of the existing well network was continued and additional wells were installed to fully delineate the plume, both laterally and vertically.
- Groundwater analyses were expanded to provide data on the microbial geochemical properties associated with observed biotic transformations of COCs.

Based on results of soil gas, residential crawl space, indoor and ambient air sampling, mitigation systems were installed by the removal program in 2009, in four residences (affecting 10 living units) bordering the Site along Center and 3rd Streets. EPA continues to monitor indoor air at these residences to ensure the protectiveness of the mitigation systems. Vinyl chloride, a highly toxic breakdown product of TCE, has not yet been detected in concentrations that exceed screening levels, except at one permanent soil gas probe located on the AMCO property about 60 feet from one residence. However, the concentration of vinyl chloride, a degradation product of TCE, could increase over time, posing an increasing threat. In early 2014, EPA conducted an inspection of the systems and found that one unit was not operating.

In October 2014, EPA became aware that the property owner of the AMCO site signed a 20-year lease with an entrepreneur, who is sub-leasing portions of the warehouse and office buildings to local artists for studio space and other uses. Due to the nature of the current use, tenants could, potentially, occupy the space for more hours per day than EPA typically uses to determine workplace risk. Results of crawlspace and indoor air data sampled during the PA/SI and RI indicated a completed pathway to indoor air, though our limited data indicates levels do not exceed commercial use. EPA collected air samples again in October 2014, and results indicated that VI continues to occur and contaminant concentrations continue to exceed levels considered safe for unrestricted use. EPA continues to monitor the indoor air and the uses of these buildings to determine if mitigation is needed. There are no institutional controls on the property to prohibit uses that exceed 10 hour/day.

Specifically identify the discrete activities and site areas to be considered by this panel evaluation:

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The proposed NTCRA would involve in situ thermal remediation of the source area, which is located in the central-southern portion of the facility and encompasses an area roughly 60 feet (east to west) by 130 feet (north-south). In the source area, LNAPL and elevated concentrations of many COCs are present in soil, with contamination extending from near surface to depths of 45 feet bgs.

Briefly describe additional work remaining at the site for construction completion after completion of discrete activities being ranked:

It is anticipated that the majority of risk at the Site (*i.e.*, vapor intrusion) would be addressed by the NTCRA. A Final ROD would address residual contamination, including semi-volatiles and metals. **Exemption 5 - DP**

Response Action Cost

Total Cost of Proposed Response Action:

(\$ amount should represent total funding need for new RA funding from national allowance above and beyond those funds anticipated to be utilized through special accounts or State Superfund Contracts.)

\$7,113,000

Source of Proposed Response Action Cost Amount:

(ROD, 30%, 60%, 90% RD, Contract Bid, USACE estimate, etc...)

February 2014 EE/CA

Breakout of Total Action Cost Planned Annual Need by Fiscal Year:

(If the estimated cost of the response action exceeds \$10 million, please provide multiple funding scenarios for fiscal year needs; general planned annual need scenario, maximum funding scenario, and minimum funding scenario.)

FY2015	\$3,500,000	Thermal system installation
FY2016	\$2,613,000	Operation and performance monitoring of thermal remedy
FY2017	\$1,000,000	Decommissioning of thermal and treatment equipment
Total	\$7,113,000	

Other information or assumptions associated with cost estimates?

1. All costs are based on estimates from the February 2014 EE/CA

Readiness Criteria

1. Date State Superfund Contract or State Cooperative Agreement will be signed (Month)?

NA

2. If Non-Time Critical, is State cost sharing (provide details)?

No

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3. If Remedial Action, when will Remedial Design be 95% complete?

NA

4. When will Region be able to obligate money to the site?

Remedial Design is scheduled for completion by August, FY14. RA Funds would be obligated by the end of FY14

5. Estimate when on-site construction activities will begin:

October 2015

6. Has CERCLIS been updated to consistently reflect project cost/readiness information?

The site has been scheduled and published in Primavera.

Site/Project Name: **AMCO Chemical Corporation**

Criteria #1 - RISKS TO HUMAN POPULATION EXPOSED (Weight Factor = 5)

Describe the exposure scenario(s) driving the risk and remedy. Include risk and exposure information on current/future use, on-site/off-site, media, exposure route, and receptors:

The EPA site team used EPA's EJSCREEN tool to assess the immediate area surrounding the Site. EJSCREEN's results indicate potential for cumulative risk in this neighborhood. Compared to the rest of the USA, the site falls in the 96th percentile for National-Scale Air Toxics Assessment (NATA) of Diesel PM, the 90th percentile for NATA's Air Toxic Cancer Risk, and the 90th percentile for NATA's Respiratory Hazard Index. Demographic indicators describe a high minority, low income, linguistically isolated, and undereducated population when comparing to the national average.

The overriding risk being addressed by this NTCRA is potential vapor intrusion (VI) in residences adjacent to the AMCO property and ongoing VI in buildings overlying the source area. Because the community is already burdened with air pollution that poses significant impacts on health, it is critical to address any Site contributions. Using OSWER's risk calculator, indoor air concentrations calculated from maximum groundwater concentrations at 5 feet below ground surface in the AMCO source area pose unacceptable potential risks (see Table below) to occupants of existing or future buildings.

TABLE OF VAPOR INTRUSION RISKS/HAZARDS CALCULATED FROM AMCO GROUNDWATER CONCENTRATIONS

CONTA-MINANT	MAXIMUM GW CONCENTRATIONS	CALCULATED* INDOOR AIR CONCENTRATION	RESIDENTIAL		COMMERCIAL	
			VI CANCER RISK	VI HAZARD INDEX	VI CANCER RISK	VI HAZARD INDEX
TCE	5,000 ug/L	2,010 ug/m ³	4.2E-03	970	6.7E-04	230
Vinyl Chloride	15,000 ug/L	17,000 ug/m ³	1.0E-01	160	6.1E-03	39

* Calculator Version 3.1.1 May 2014 RSLs

Four down-gradient residences adjacent to the Site (comprising 10 living units) have VI mitigation systems, installed by EPA in 2009, based on detections of site contaminants in crawl spaces. Recently, it was discovered that one of the systems was no longer operating, and it is not known when and how this system failed. Fortunately, sampling results of indoor collected soon after this discovery revealed non-detects for TCE and its degradation products in the indoor air. However, this incident underscores the importance of addressing the ultimate cause of VI (the source area) to provide reliable, long-term health protection for nearby residents.

The warehouse and office space overlying a portion of the source area was recently sub-leased to one or more artists (e.g., a glass manufacturing studio has been created within the warehouse). There are no enforceable restrictions to limit use of the building to commercial standards (8-10 hrs/day), so commercial standards may not be applicable to these particular tenants. Results of indoor air samples collected and analyzed in October 2014 showed concentrations in the office space exceeding residential RSLs; indoor air concentrations in the warehouse are only slightly below residential screening values, and it is likely the indoor air concentrations will increase under winter conditions. EPA has scheduled follow-up winter monitoring to determine whether mitigation is needed.

Risks associated with vapor inhalation, dermal contact with and ingestion of soil, and inhalation of fugitive dust are currently mitigated by a cement layer covering the Site. When the cement is breached (e.g, during implementation of the proposed NTCRA or during future development), direct exposures to soil could occur. For future construction workers, the cancer risk is 1.E-05 and the non-cancer Hazard Index is 23 for shallow soil. For a hypothetical resident, the cancer for adult plus child (totaling 30 years) is 3.E-04 and the non-cancer hazard is 1 for an adult and 10 for a child resident.

Estimate the number of people reasonably anticipated to be exposed in the absence of any future EPA action for each medium for the following time frames:

<u>MEDIUM</u>	<u><2yrs</u>	<u><10yrs</u>	<u>>10yrs</u>
Indoor Air	160-180	680-740	1,300-1,500
Soil	10-20	50-100	200-250
Groundwater	0	0	0

Discuss the likelihood that the above exposures will occur:

EPA has documented that vapor intrusion is occurring in the two buildings over the source area (warehouse and office space). The current occupants of these buildings may be exposed to vapors for more than 10 hours/day, so commercial RSLs may not be protective. The warehouse currently houses artists, and the leaseholder is planning to sublease with a company that will put in a Crossfit Gym. With a combination of artists and gym members at a conservative number of 20-30 artists and 100-110 gym members each two years, the indoor air exposure for a two year period is determined to be 120-140 people.

EPA has also documented that vapors from the contaminated groundwater beneath four down-gradient private homes intruded into their crawl spaces, triggering the installation of mitigation systems as a precautionary measure. Any failures of those systems (as recently happened in one of those residences) could create a completed pathway from underlying groundwater to the indoor air. As a conservative estimate, four persons

could possibly reside in each of the 10 living units of these four residences, totaling 40 persons. With turnover of occupants the number exposed could be 80 over a ten year period.

It is likely that future construction activities will breach the concrete layer over the Site creating exposures to contaminated soil with potential risks due to dermal contact, incidental ingestion or inhalation of fugitive dust. As an example, the electrical and water utilities maintained by the City of Oakland are located in the source area along 3rd Street, so trenching through the cement occurs periodically. EPA has also been contacted by an established developer who owns neighboring properties in the area with an interest in developing the area further. Due to the close proximity to public transit (being two blocks away from a BART station), as well as an infill trends of high-density housing in the Bay Area, it is anticipated that within 10 years significant development will occur on and around this site, exposing construction workers to contaminated soil. The number of construction workers that could be exposed to soil under these scenarios is estimated at 10-20 per year from utility and excavation activities, with an estimated increase in worker exposure in 10 years due to redevelopment activities.

Other Risk/Exposure Information?

None

Site/Project Name: **AMCO Chemical Corporation**

Criteria #2 – SITE/CONTAMINANT STABILITY (Weight Factor = 5)

Describe the means/likelihood that contamination could impact other areas/media given current containment:

Vapors of the primary risk drivers, TCE and vinyl chloride, are not stable. They move from soil and groundwater into ambient air, when the concrete cap over the Site is breached, and into indoor air where preferential pathways through soil and overlying structures allow vapor transport. Vapor intrusion is uncontrolled at the office and warehouse at the former AMCO facility. Moreover, we have no institutional controls to prohibit specific uses (e.g., residential) or modifications of the buildings/homes (that might create new preferential pathways) on and near the AMCO property.

Dissolution from LNAPL and desorption from contaminated soil in the source area are continuing sources of contamination to groundwater, notably for VOCs. In the absence of any form of containment, highly concentrated levels of VOCs within the source area will continue to migrate, uncontrolled, into the down-gradient portions of the dissolved plume beneath a residential neighborhood and a city park.

Except for VOCs and 1,4-dioxane, COCs are not migrating and remain primarily a soil contamination problem in the source area. As chemical releases to the environment have discontinued at the former AMCO facility, vertical transport mechanisms (i.e., DNAPL-like movement) are less likely to affect contaminant transport at this time, and reductive dechlorination and other biotic transformations have limited the migration of the VOCs at the boundary of the plume.

Are the contaminants contained in engineered structure(s) that currently prevents migration of contaminants? Is this structure sound and likely to maintain its integrity?

No

Are the contaminants in a physical form that limits the potential to migrate from the site? Is this physical condition

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reversible or permanent?

No, the contaminants are not in a physical form that limits the potential to migrate from the site.

Are there institutional physical controls that currently prevent exposure to contamination? How reliable is it estimated to be?

No

Other information on site/contaminant stability?

No

Site/Project Name: **AMCO Chemical Corporation**

Criteria #3 – CONTAMINANT CHARACTERISTICS (Weight Factor = 3)

(Concentration, toxicity, and volume or area contaminated above health based levels)

List Principle Contaminants (Please provide average and high concentrations.):

(Provide upper end concentration (e.g. 95% upper confidence level for the mean, as is used in a risk assessment, or maximum value [assuming it is not a true outlier], along with a measure of how values are distributed {e.g. standard deviation} or a central tendency values [e.g., average].)

<u>Contaminant</u>	<u>Media</u>	<u>*Concentrations</u>
TCE	Soil	Max – 5,570,000 µg/kg in source area
TCE	Groundwater	Max – 5,000 µg/L in source area
TCE	Indoor Air	Max – 1.5 µg/m ³ in source area (office)
TCE	Crawlspace Air	Max – 28 µg/m ³ in source area (office)
TCE	Soil Vapor	Max – 11,000 ug/m ³ in source area (beneath 3 rd St.)
Vinyl Chloride	Soil	Max – 15,800 ug/kg in source area
Vinyl Chloride	Groundwater	Max – 15,000 µg/L in source area
Vinyl Chloride	Indoor Air	Max – ND
Vinyl Chloride	Crawlspace Air	Max – 0.26 µg/m ³ in source area (office)
Vinyl Chloride	Soil Vapor	Max – 22 ug/m ³ in source area
cis-DCE	Soil	Max – 1,380,000 ug/kg in source area
cis-DCE	Groundwater	Max – 66,000 ug/L in source area
cis-DCE	Indoor Air	Max – 12.0 ug/m ³ in source area (office)
cis-DCE	Crawlspace Air	Max – 270 ug/m ³ in source area (office)
cis-DCE	Soil Vapor	Max – 38,000 ug/m ³ in source area (beneath 3 rd St.)
Benzene	Soil	Max – 14,600 ug/kg in source area
Benzene	Groundwater	Max – 340 ug/L in source area
Benzene	Indoor Air	Max – 0.47 ug/m ³ in source area (office)
Benzene	Crawlspace Air	Max – 0.50 ug/m ³ in source area (office)

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Benzene	Soil Vapor	Max – 18 ug/m ³ in source area
<p><i>*Concentrations: Analytical results were obtained from samples collected in 2012 - 2013</i></p>		
<p>Describe the characteristics of the contaminant with regards to its inherent toxicity and the significance of the concentrations and amount of the contaminant to site risk. <i>(Please include the clean up level of the contaminants discussed.)</i></p>		
<p>TCE vapors are of great concern, especially for women in the first trimester of pregnancy, because of the potential for cardiac malformations to the developing fetus. For fetal cardiac malformations, the critical period for exposure is considered to be the approximate 3-week period during which the heart develops. Region 9 identifies women of reproductive age as the sensitive population of concern, rather than only pregnant women, because some women may not be aware of their pregnancy during the critical period of the first trimester.</p> <p>At AMCO, the indoor air TCE concentrations in the buildings over the source area are sufficient to cause concern about non-cancer effects of TCE on women of child-bearing age, and to trigger further monitoring to determine the need for mitigation. In four private residences (10 living units) near the AMCO site, mitigation systems have been installed to address potential VI. However, mitigation systems do not guarantee protection for the residents, as the State of California will not place institutional controls on private properties to require operation of the systems. The systems could be turned off or malfunction for a period exceeding the critical 3-week period during which fetal malformations could occur. Therefore, mitigation systems are not an acceptable long-term solution.</p> <p>Vinyl chloride has been detected in the crawlspaces of down-gradient residences. These detections were the basis for installing mitigation systems in residences. A concern is that as TCE degrades, the concentrations of vinyl chloride could increase over time, increasing risks from this extremely toxic compound.</p> <p>Since the proposed NTCRA is an interim action, we are not proposing final cleanup levels. However, we have developed Remedial Action Objectives based health protective Regional Screening Levels. Exemption 5 - DP</p> <div style="background-color: #cccccc; height: 60px; width: 100%;"></div>		
<p>Describe any additional information on contaminant concentrations which could provide a better context for the distribution, amount, and/or extent of site contamination. <i>(e.g. frequency of detection/outlier concentrations, exposure point concentrations, maximum or average concentration values, etc.....)</i></p>		
<p>NA</p>		
<p>Other information on contaminant characteristics?</p>		
<p>NA</p>		

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Site/Project Name:	AMCO Chemical Corporation
Criteria #4 – THREAT TO SIGNIFICANT ENVIRONMENT (Weight Factor = 3) <i>(Endangered species or their critical habitats, sensitive environmental areas.)</i>	
Describe any observed or predicted adverse impacts on ecological receptors including their ecological significance, the likelihood of impacts occurring, and the estimated size of impacted area:	
There is no documented observation or prediction of an ecological impact at this Site.	
Would natural recovery occur if no action was taken? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, estimate how long this would take.	
Natural attenuation of the plume is occurring, as measured primarily by the presence of appropriate soil bacteria and contaminant degradation products. However, the rate of natural attenuation is not sufficient to remediate the plume within a reasonable time frame (i.e. 30 years).	
Other information on threat to significant environment?	
None	
Site/Project Name:	AMCO Chemical Corporation
Criteria #5 – PROGRAMMATIC CONSIDERATIONS (Weight Factor = 4) <i>(Innovative technologies, state/community acceptance, environmental justice, redevelopment, construction completion, economic redevelopment.)</i>	
Describe the degree to which the community accepts the response action.	
<p>The public comment period for the EE/CA is February 10 – March 12, 2014. The CAG is holding a workshop to review the EE/CA and provide comments (with the assistance of an EPA-contracted technical advisor) in late February. We expect to have community comments from that workshop when the Priority Panel convenes. However, potential remedies for the Site have been an ongoing discussion between EPA and the CAG since the CAG was formed in 2009. After EPA's 2011 consultation with the National Remedy Review Board on the proposed excavation remedy (a proposed Interim ROD), it became clear to the community that an in-situ remedy would greatly reduce risks to the community during remedy implementation and reduce overall costs (therefore increasing chances of funding), as compared with the excavation remedy. However, the community has repeatedly stated that incineration of extracted media, as part of an in situ remedy would not be acceptable. EPA's 1998 in-situ removal action (dual-phase extraction and treatment involving incineration) was aborted due to community concerns about releases of dioxin/furans from the treatment unit.</p> <p>Two successive EPA project managers presented the thermal alternative, with cryogenic treatment of vapors, during 2 separate CAG meetings (December 2013 and March 2014). They were encouraged by the CAG to use an expedient process to implement such a remedy. More recent and ongoing conversations with members of the CAG continue to support EPA's proposed route to a remedy.</p>	
Describe the degree to which the State accepts the response action.	
<p>EPA held two meetings (2013 and 2014) with the Department of Toxic Substances Control (DTSC) project manager and technical support staff to specifically discuss the pros and cons of a thermal remedy. DTSC had no objections to moving forward with this remedy as a preferred alternative for a Non-Time Critical Removal, while also supporting consideration of other possible options during the EE/CA process. We received comments from DTSC on the draft EE/CA on January 28, 2014, which primarily focused on improving the quality of the EE/CA document and the discussion of technical details. DTSC did not specifically support any single alternative in their comments.</p>	

Describe other programmatic considerations, e.g.; natural resource damage claim pending, Brownfields site, use of innovative technology, construction completion, economic redevelopment, environmental justice, etc...

The South Prescott neighborhood, an environmental justice (EJ) community, has been waiting since 1998, when EPA's first removal action was ended, for further cleanup. South Prescott is disproportionately burdened by multiple sources of pollution and ranks in the top 10 percent of the most impacted communities in California, according to an environmental hazard assessment tool developed by the California Environmental Protection Agency ("CalEPA") and the Office of Environmental Health Hazard Assessment ("OEHHA"). (This tool, known as the California Communities Environmental Health Screening Tool, shows which portions of the state have higher pollution burdens and vulnerabilities than other areas and are, therefore, most in need of assistance.)

Using EPA's EJSCREEN (Version 2), which compares communities on a national scale, the South Prescott community ranks even higher on the EJ scale than indicated by the CalEPA tool. Nationally, this neighborhood ranks in the 96th percentile for diesel PM and exceeds the 90th percentile for overall air toxics cancer risk and respiratory hazard.

The South Prescott community has been raising the issue of cumulative environmental impacts for years. EPA Region 9 has responded to these concerns by agreeing to take a conservative approach when setting Site cleanup levels (1E-6 for cancer risk; HQ=1 for non-cancer hazards) and considering cumulative impacts in setting cleanup priorities. In the South Prescott neighborhood, the removal program addressed an environmental health hazard, lead in residential soils, which was unrelated to the AMCO Site but contributing to cumulative impacts. An expedient approach to address VI issues related to AMCO contaminants is consistent with Region 9's approach to the potential for cumulative impacts at this and other Sites.

Moreover, vapor intrusion at our Superfund sites is one of the top priorities for the Region 9 Superfund Division. TCE vapors are of great concern, especially for women in the first trimester of pregnancy (because of the potential for cardiac malformations to the developing fetus). For fetal cardiac malformations, the critical period for exposure is considered to be the approximate 3-week period during which the heart develops. Region 9 has, therefore, established interim action levels and response action recommendations to protect against potential non-cancer outcomes, including developmental effects such as cardiac malformations. These recommendations identify women of reproductive age as the sensitive population of concern, rather than only pregnant women, because some women may not be aware of their pregnancy during the critical period of the first trimester.

At AMCO, the indoor air TCE concentrations in the buildings over the source area are sufficient for concern about non-cancer effects of TCE on women of child-bearing age. EPA is currently monitoring to determine the need for mitigation. In four private residences (10 living units) near the AMCO site, mitigation systems have been installed to address potential VI. However, mitigation systems do not guarantee protection for the residents of these homes, as the State of California will not place institutional controls on private properties to require operation of the systems. The systems could be turned off or malfunction for a period exceeding the critical 3-week period during which fetal malformations could occur.

Exemption 5 - DP